

(H)
(oh)

external connection protruding electrodes provided to the end portions of the protruding electrodes that protrude from the resin layer.

110. The semiconductor device as claimed in claim 108, wherein the resin layer and the semiconductor element have surfaces defined by cutting using a dicer.

111. A semiconductor device comprising:
a semiconductor element having a surface on which protruding electrodes having convex end portions are formed;

a resin layer formed on the surface of the semiconductor element so as to seal the protruding electrodes except the convex end portions thereof; and

external connection protruding electrodes provided to the convex end portions of the protruding electrodes that protrude from the resin layer.

112. The semiconductor device as claimed in claim 111, wherein the resin layer and the semiconductor element have surfaces defined by cutting using a dicer.

113. A semiconductor device comprising :
a semiconductor element having a surface on which protruding electrodes are formed; and
a resin layer formed on the surface of the semiconductor element so as to seal the protruding
electrodes except end portions thereof,
the protruding electrodes having a core portion and an electrically conductive film formed
on a surface of the protruding core portion.

~~FI~~
Sub
H2>
114. The semiconductor device as claimed in claim 113, wherein an end portion of the
electrically conductive film on a side on which the semiconductor element is located is electrically
connected to the semiconductor element.

115. The semiconductor device as claimed in claim 113, wherein the core portion comprises
an elastic resin.

116. The semiconductor device as claimed in claim 114, wherein the elastic resin is
polyimide.

117. A semiconductor device comprising:
a semiconductor element having a surface on which protruding electrodes are formed;

H2
Cont

a resin layer formed on the surface of the semiconductor element so as to seal the protruding electrodes except end portions thereof; and

external connection protruding electrodes provided to the end portions of the protruding electrodes that protrude from the resin layer,

the protruding electrodes having a core portion and an electrically conductive film formed on a surface of the protruding core portion.

F1

118. The semiconductor device as claimed in claim 117, wherein an end portion of the electrically conductive film on a side on which the semiconductor element is located is electrically connected to the semiconductor element.

H3 >

119. The semiconductor device as claimed in claim 117, wherein the core portion comprises an elastic resin.

120. The semiconductor device as claimed in claim 119, wherein the elastic resin is polyimide.

121. A semiconductor device comprising:

a semiconductor element having a surface on which protruding electrodes are formed; and

a resin layer formed on the surface of the semiconductor element so as to seal the protruding electrodes except end portions thereof,

the semiconductor element having an outer peripheral portion that is thinner than a central portion thereof.

122. A semiconductor device comprising :

a semiconductor element having a surface on which protruding electrodes are formed; and
a resin layer formed on the surface of the semiconductor element so as to seal the protruding electrodes except end portions thereof,

the semiconductor element having an outer peripheral portion that is thicker than a central portion thereof.

123. A semiconductor device comprising :

a semiconductor element having a surface on which protruding electrodes are formed; and
a resin layer formed on the surface of the semiconductor element so as to seal the protruding electrodes except end portions thereof,

a part of a side portion of the semiconductor element being covered with the resin layer.

124. A semiconductor device comprising:

a semiconductor element having a surface on which protruding electrodes are formed;
a resin layer formed on the surface of the semiconductor element so as to seal the protruding electrodes except end portions thereof; and

a protrusion for positioning of the semiconductor device, the protrusion being formed on the surface of the semiconductor device and having an end portion exposed from the resin layer.

125. The semiconductor device as claimed in claim 124, wherein the resin layer and the semiconductor element have surfaces defined by cutting using a dicer.

FI 126. The semiconductor device as claimed in claim 124, wherein the protrusion for positioning has a structure identical to that of the protruding electrodes.

127. A semiconductor device comprising:
a semiconductor element having a surface on which protruding electrodes are formed; and
a compression-molded resin layer formed on the surface of the semiconductor element so as to seal the protruding electrodes except end portions thereof.

128. The semiconductor device as claimed in claim 127, wherein the compression-molded resin layer and the semiconductor element have surfaces defined by cutting using a dicer.

Sub Hs 129. The semiconductor device as claimed in claim 128, wherein the side surface of the resin layer and the side surface of the semiconductor element are flush with each other.

130. The semiconductor device as claimed in claim 127, wherein end portions of the protruding electrodes protrude from the compression-molded resin layer.

131. A semiconductor device comprising:

FI
Cond
a semiconductor element having a surface on which protruding electrodes are formed;

a compression-molded resin layer formed on the surface of the semiconductor element so as to seal the protruding electrodes except end portions thereof; and

external connection protruding electrodes provided to the end portions of the protruding electrodes that protrude from the compression-molded resin layer,

the compression-molded resin layer and the semiconductor element having surfaces defined by cutting using a dicer.
